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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Dirk Steinmueller

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625 SLATERS LANE

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EXAMINER

BARAN, MARY C

ART UNIT

PAPER NUMBER

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MAIL DATE

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09/15/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/525,952	<b>Applicant(s)</b> STEINMUELLER ET AL.	
	<b>Examiner</b> MARY C. BARAN	<b>Art Unit</b> 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 16-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. In view of the Appeal Brief filed on 9 April 2009, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing the last page.

### ***Response to Amendment***

2. The action is responsive to the Appeal Brief filed on 9 April 2009. Claims 16-30 are pending.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites, "a method for monitoring the functioning of sensors which measure and monitor the state parameters of liquids or gases", which indicates that a plurality of sensors are used to measure and monitor various liquid or gaseous state parameters. The claim then goes on to state, "placing the sensor in a test state"; however, it is not clear from the claimed language which of the multiple sensors is selected to be the one placed in a test state.

The following language is suggested in order to overcome this rejection:

replace "monitoring the functioning of sensors" (claim 16, line 1) with --monitoring the functioning of a plurality of sensors--;

replace "placing the sensor" (claim 16, line 3) with --placing at least one of the plurality of sensors--.

Claims 17-30 are rejected as they do not remedy the deficiencies of claim 16.

Claim 18 recites, "a function is specified and used for a particular sensor". Claim 16, from which claim 18 depends, recites "monitoring the functioning of sensors", indicating a plurality of sensors. Therefore, it is not clear from the claim language which of these plurality of sensors are selected to be the "particular sensor", as claimed.

Applicant should amend claim 18 to be consistent with claim 16 as suggested above, if the meaning is intended to be so. For example: replace "a particular sensor" with --the at least one of the plurality of sensors--.

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 16-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 16-30 are rejected under 35 U.S.C. 101 because the claimed invention merely recites a method for monitoring the functioning of sensors. While Applicant has included the limitation "placing the sensor in a test state at time intervals", this limitation simply indicates that a sensor is available during a time interval for data gathering or observation; however, the remaining method steps for monitoring the functioning of the sensor, the subject matter to which this claim is drawn, are not linked to a statutory class, nor do they transform any underlying subject matter.

Claims 16-30 are rejected under 35 U.S.C. 101 because the claimed invention is neither tied to a machine or apparatus, nor does it perform a transformation. As currently presented, the method steps in claims 16-30 need not be performed by a specific machine.

Based on recent Court decisions, it has been held that a § 101 process must (1) be tied to another statutory class (a particular machine or apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. Thus, to qualify as a § 101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example, by identifying the

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apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example, by identifying the material that is being changed to a different state.

As such, claim 16 only recites a method that includes steps that could be purely mental and the claim does not in any way tie the process to another statutory class nor does the claim transform an article to a different state or thing. Such claims are therefore non-statutory under 35 U.S.C. 101.

Claims 17-30 do not remedy the deficiencies of the claims from which they depend, with respect to 35 USC 101.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 16-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Choe (U.S. Patent No. 6,510,397).

Referring to claim 16, Choe teaches a method for monitoring the functioning of sensors (see Choe, column 12 lines 39-41) which measure and monitor the state parameters of liquids or gases (see Choe, column 4 lines 26-30), comprising the steps of:

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placing the sensor in a test state at time intervals (see Choe, column 12 lines 43-47 and lines 61-63);

registering test parameters at time intervals or at time intervals during the course of registering measured values (see Choe, column 12 lines 61-63);

storing the registered test parameters (see Choe, column 12 lines 47-50);

evaluating a backward-looking chronological development of the stored test parameters in order to perform functional monitoring (see Choe, column 18 line 58 – column 19 line 65);

predicting from said evaluations the development of sensor behavior to be expected in the future (see Choe, column 7 lines 13-15, column 14 lines 1-15 and column 18 line 65 – column 19 line 1); and

obtaining thereby information concerning the duration of the remaining disturbance-free operation of the sensor (see Choe, column 14 lines 4-12).

Referring to claim 17, Choe teaches that said evaluation step is conducted using non-linear interpolation methods, in order to obtain a function describing the sensor behavior (see Choe, column 19 line 13 – column 20 line 9).

Referring to claim 18, Choe teaches a function is specified and used for a particular sensor, which reproduces the experience-based sensor behavior (see Choe, column 17 lines 18-35).

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Referring to claim 19, Choe teaches that the function involves a polynomial function (see Choe, column 19 lines 18-65).

Referring to claim 20, Choe teaches a first predictive value is determined for the wear limit (see Choe, column 12 lines 39-41).

Referring to claim 21, Choe teaches testing whether the wear limit of the sensor will be reached before the next registering of test parameters (see Choe, column 14 lines 1-12).

Referring to claim 22, Choe teaches testing whether a predictively obtained value of the test parameter lies within a warning range this side of the wear limit as defined at this time (see Choe, column 16 lines 39-43).

Referring to claim 23, Choe teaches determining and issuing and displaying, and where necessary, initiating measures for maintenance on the basis of the information concerning the duration of the remaining, disturbance-free operation (see Choe, column 5 lines 35-40).

Referring to claim 24, Choe teaches determining and, where appropriate, issuing a predictive point in time for replacement of the sensor on the basis of the information



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concerning the duration of the remaining, disturbance-free operation (see Choe, column 1 lines 12-35).

Referring to claim 25, Choe teaches that as a test parameter, the slope of the sensor signal, or signals, in a particular test state of the sensor is registered and evaluated (see Choe, column 16 line 59 – column 17 line 17).

Referring to claim 26, Choe teaches that as a test parameter, the zero point of the sensor signal, or signals, in a particular test state of the sensor is registered and evaluated (see Choe, column 15 lines 21-33).

Referring to claim 27, Choe teaches that as a test parameter, the internal resistance of an electrode is registered and evaluated (see Choe, column 6 lines 23-26).

Referring to claim 28, Choe teaches that as a test parameter, the change of the dynamic behavior of signals produced by the sensor itself is registered and evaluated (see Choe, column 12 lines 43-47).

Referring to claim 29, Choe teaches a plurality of different test parameters are registered and evaluated (see Choe, column 13 lines 2-31).

Referring to claim 30, Choe teaches obtaining a sensor specific, basic data from a storage arrangement of the sensor or the measured value transmitter over the internet or over update media, for the evaluation (see Choe, column 9 lines 46-60).

### ***Response to Arguments***

6. Applicant's arguments filed 9 April 2008 have been fully considered but they are not persuasive.

Applicant argues that Choe does not teach “evaluating a backward-looking chronological development of the stored test parameters in order to perform functional monitoring.” However, Applicant's arguments are not well taken, as the “evaluating a backward-looking chronological development of the stored test parameters” simply means that historical data is gathered and then evaluated to determine the functionality of the sensor. Choe teaches setting the thresholds which allow the user to determine if the sensor function properly, if the sensor is close to a fail point or if the sensor has failed, in other words, the thresholds are user to determine the functionality of the sensor. These thresholds are determined by putting the sensor in a operating state and setting a "learning time" which collects data from the sensor and stores these values in memory. The collected data is the evaluated using statistical methods (i.e. mean, standard deviation) to generate and set the threshold values used to determine sensor functionality as described above (see Choe, column 18 line 58 – column 19 line 65). Therefore, Choe teaches evaluating a backward-looking chronological development of

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the stored test parameters in order to perform functional monitoring (see Choe, column 18 line 58 – column 19 line 65).

Applicant further argues that Choe does not teach "predicting from said evaluations the development of sensor behavior to be expected in the future." However, Applicant's arguments are not well taken. Choe teaches determining mean time to failure and statistical trending analysis (i.e. predicting expected future behavior) using stored data for statistical trend analysis to determine sensor failure (see Choe, column 7 lines 13-15, column 14 lines 1-15 and column 18 line 65 – column 19 line 1). Therefore, Choe teaches predicting from said evaluations the development of sensor behavior to be expected in the future (see Choe, column 7 lines 13-15, column 14 lines 1-15 and column 18 line 65 – column 19 line 1).

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARY C. BARAN whose telephone number is (571)272-2211. The examiner can normally be reached on Monday to Friday 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571) 272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mary Catherine Baran/  
10 September 2009

/Eliseo Ramos-Feliciano/  
Supervisory Patent Examiner, Art Unit 2857